

Amendment and Response to Office Action mailed 12/16/2003
Serial No. 10/042,955

Att. Dkt. No. 113937-002

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): A method for treating a surface of a layered polymeric structure comprising:

providing a first non-molten sheet of material;

providing a second non-molten sheet of material;

positioning the first non-molten sheet or the second non-molten sheet to overlap at least a portion of the other sheet to define an interference zone;

directing a first molten polymeric material into the interference zone to adhere the first non-molten sheet to the second non-molten sheet to form the layered structure; and

texturing a an outer surface of the first non-molten sheet or the second non-molten sheet to form a pattern on the outer surface.

Claim 2 (original): The method of claim 1 wherein the first sheet is a second polymeric material.

Claim 3 (original): The method of claim 2 wherein the second polymeric material is a monolayer structure.

Claim 4 (original): The method of claim 3 wherein the second polymeric material is a multiple layer structure.

Claim 5 (original): The method of claim 2 wherein the second polymeric material is selected from the group consisting of polyolefins, ethylene and vinyl acetate copolymers, ethylene copolymerized with carboxylic acids having from 3 to 20 carbons and ester and anhydride derivatives thereof, ethylene and vinyl alcohol copolymers, polyamides, polyesters, polyvinyl vinyl chloride, PVDC and elastomers.

Claim 6 (original): The method of claim 5 wherein the polyolefins are selected from homopolymers and copolymers.

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Claim 7 (original): The method of claim 6 wherein the copolymers are selected from copolymers of ethylene and α -olefins having from 3 to 20 carbons.

Claim 8 (original): The method of claim 4 wherein the multiple layered structure comprises a first layer of an ethylene and α -olefin copolymer and a second layer of an ethylene and vinyl alcohol copolymer.

Claim 9 (original): The method of claim 2 wherein the second sheet is selected from the group consisting of a third polymeric material, paper, and metal.

Claim 10 (original): The method of claim 9 wherein the third polymeric material is selected from the group consisting of polyolefins, ethylene and vinyl acetate copolymers, ethylene copolymerized with carboxylic acids having from 3 to 20 carbons and ester and anhydride derivatives thereof, ethylene and vinyl alcohol copolymers, polyamides, polyesters, polyvinyl vinyl chloride and elastomers.

Claim 11 (original): The method of claim 10 wherein the third polymeric material is a polyamide.

Claim 12 (original): The method of claim 11 wherein the polyamide is selected from nylon 6,6, nylon 6, and nylon 6,12.

Claim 13 (original): The method of claim 1 wherein the step of directing a first polymeric material comprises the step of extruding a molten polymeric material.

Claim 14 (original): The method of claim 13 wherein the molten polymeric material is a second polyolefin.

Claim 15 (original): The method of claim 14 wherein the second polyolefin is a homopolymer of ethylene.

Claim 16 (original): The method of claim 1 wherein the step of texturing is carried out prior to the step of adhering the first sheet to the second sheet, substantially simultaneously with

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the step of joining the first sheet to the second sheet or essentially immediately after the step of adhering the first sheet to the second sheet.

Claim 17 (original): The method of claim 16 wherein the step of texturing comprises the step of contacting the first sheet or the second sheet with a surface having a pattern.

Claim 18 (original): The method of claim 17 wherein the surface is provided on a roll.

Claim 19 (original): The method of claim 18 wherein the roll is a chill roll.

Claim 20 (original): The method of claim 18 wherein the roll is a backup roll.

Claim 21 (original): The method of claim 17 wherein the pattern is carried on two rolls.

Claim 22 (original): The method of claim 18 wherein the pattern extends outward from the surface of the roll.

Claim 23 (original): The method of claim 18 wherein the pattern extends inward from the surface of the roll.

Claim 24 (original): The method of claim 18 wherein the roll is metal.

Claim 25 (original): The method of claim 18 wherein the roll is rubber, cork, or plastic.

Claim 26 (original): The method of claim 17 wherein the pattern comprises a plurality of spaced objects.

Claim 27 (currently amended): A method for treating a surface of a layered polymeric structure comprising:

providing a first non-molten sheet of a first polymeric material selected from the group consisting of polyolefins, ethylene and vinyl acetate copolymers, ethylene copolymerized with carboxylic acids having from 3 to 20 carbons and ester and anhydride derivatives thereof, ethylene and vinyl alcohol copolymers, polyamides, polyesters, polyvinyl vinyl chloride and elastomers;

providing a second non-molten sheet;

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positioning the first non-molten sheet or the second non-molten sheet to overlap at least a portion of the other sheet to define an interference zone;

directing a second molten polymeric material into the interference zone to adhere the first non-molten sheet to the second non-molten sheet to form the layered structure; and

texturing the first sheet to form a pattern on ~~a~~ an outer surface of the first non-molten sheet.

Claim 28 (original): The method of claim 27 wherein the second sheet is selected from the group consisting of a third polymeric material, paper, and metal.

Claim 29 (original): The method of claim 28 wherein the second sheet is a third polymeric material selected from the group consisting of polyolefins, ethylene and vinyl acetate copolymers, ethylene copolymerized with carboxylic acids having from 3 to 20 carbons and ester and anhydride derivatives thereof, ethylene and vinyl alcohol copolymers, polyamides, polyesters, polyvinyl vinyl chloride, PVDC and elastomers.

Claim 30 (original): The method of claim 29 wherein the step of texturing is carried out essentially simultaneously with the step of adhering the first sheet to the second sheet.

Claim 31 (canceled).

Claim 32 (original): The method of ~~claim 31~~ claim 27 wherein the step of directing a second polymeric material into the interference zone comprises the step of applying an adhesive material.

Claim 33 (original): The method of claim 30 wherein the step of texturing comprises the step of contacting the first sheet with a surface having a pattern.

Claim 34 (original): The method of claim 33 wherein the surface is provided on a roll.

Claim 35 (original): The method of claim 34 wherein the roll is a chill roll.

Claim 36 (original): The method of claim 34 wherein the roll is a back-up roll.

Claim 37 (original): The method of claim 33 wherein the surface is carried on two rolls.

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Claim 38 (original): The method of claim 34 wherein the pattern extends outward from the surface of the roll.

Claim 39 (original): The method of claim 34 wherein the pattern extends inward from the surface of the roll.

Claim 40 (original): The method of claim 33 wherein the pattern is generally a checkerboard pattern.

Claim 41 (original): The method of claim 33 wherein the pattern is defined by a series of spaced protuberances.

Claim 42 (original): The method of claim 41 wherein the protuberances have a generally circular shape.

Claim 43 (original): The method of claim 41 wherein the protuberances have a polygonal shape.

Claim 44 (original): The method of claim 41 wherein the protuberances have an irregular shape.

Claim 45 (original): The method of claim 41 wherein the protuberances have a generally teardrop shape.

Claim 46 (original): The method of claim 41 wherein the protuberances have a first set of protuberances with a first shape and a second set of protuberances with a second shape different from the first shape.

Claim 47 (original): The method of claim 41 wherein the protuberances are generally S-shaped.

Claim 48 (original): The method of claim 30 wherein the first sheet is a monolayer structure or a multiple layered structure.

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Claim 49 (original): The method of claim 30 wherein the first sheet is a monolayer structure.

Claim 50 (original): The method of claim 30 wherein the first sheet is a multiple layered structure.

Claim 51 (original): The method of claim 50 wherein the multiple layered structure has a first layer and a second layer.

Claim 52 (original): The method of claim 51 wherein the first layer is a polyolefin.

Claim 53 (original): The method of claim 52 wherein the second layer is a barrier material.

Claim 54 (original): The method of claim 53 wherein the barrier material comprises ethylene vinyl alcohol copolymer or PVDC.

Claim 55 (original): The method of claim 51 wherein the first layer is an ethylene and α -olefin copolymer and the second layer is ethylene and vinyl alcohol copolymer.

Claim 56 (original): The method of claim 48 wherein the second sheet is a monolayer structure or a multiple layered structure.

Claim 57 (original): The method of claim 56 wherein the second sheet contains a layer of a polyamide or a layer of a polyester.

Claim 58 (original): The method of claim 57 wherein the second polymeric material is a polyolefin.

Claim 59 (original): The method of claim 58 wherein the second polymeric material is a homopolymer of ethylene or a copolymer of ethylene and α -olefin having from 3 to 20 carbons.

Claim 60 (original): The method of claim 59 wherein the second polymeric material is a homopolymer of polyethylene.